1	ATRRYYLGAV	ELSWDYMQSD	LGELPVDARF	PPRVPKSFPF	NTSVVYKKTL
51	FVEFTVHLFN	IAKPRPPWMG	LLGPTIQAEV	YDTVVITLKN	MASHPVSLHA
101	VGVSYWKASE	GAEYDDQTSQ	REKEDDKVFP	GGSHTYVWQV	LKENGPMASD
151	PLCLTYSYLS	HVDLVKDLNS	GLIGALLVCR	EGSLAKEKTQ	TLHKFILLFA
201	VFDEGKSWHS	ETKNSLMQDR	DAASARAWPK	MHTVNGYVNR	SLPGLIGCHR
251	KSVYWHVIGM	GTTPEVHSIF	LEGHTFLVRN	HRQASLEISP	ITFLTAQTLL
301	MDLGQFLLFC	HISSHQHDGM	EAYVKVDSCP	EEPQLRMKNN	EEAEDYDDDL
351	TDSEMDVVRF	DDDNSPSFIQ	IRSVAKKHPK	TWVHYIAAEE	EDWDYAPLVL
401	APDDRSYKSQ	YLNNGPQRIG	RKYKKVRFMA	YTDETFKTRE	AIQHESGILG
451	PLLYGEVGDT	LLIIFKNQAS	RPYNIYPHGI	TDVRPLYSRR	LPKGVKHLKD
501	FPILPGEIFK	YKWTVTVEDG	PTKSDPRCLT	RYYSSFVNME	RDLASGLIGP
551	LLICYKESVD	QRGNQIMSDK	RNVILFSVFD	ENRSWYLTEN	IQRFLPNPAG
601	VQLEDPEFQA	SNIMHSINGY	VFDSLQLSVC	LHEVAYWYIL	SIGAQTDFLS
651	VFFSGYTFKH	KMVYEDTLTL	FPFSGETVFM	SMENPGLWIL	GCHNSDFRNR
701	GMTALLKVSS	CDKNTGDYYE	DSYEDISAYL	LSKNNAIEPR	SFSQNPPVLK
751	RHQREITRTT	LQSDQEEIDY	DDTISVEMKK	EDFDIYDEDE	NQSPRSFQKK
801	TRHYFIAAVE	RLWDYGMSSS	PHVLRNRAQS	GSVPQFKKVV	FQEFTDGSFT
851	QPLYRGELNE	HLGLLGPYIR	AEVEDNIMVT	FRNQASRPYS	FYSSLISYEE
901	DQRQGAEPRK	NFVKPNETKT	YFWKVQHHMA	PTKDEFDCKA	WAYFSDVDLE
951	KDVHSGLIGP	LLVCHTNTLN	PAHGRQVTVQ	EFALFFTIFD	ETKSWYFTEN
1001	MERNCRAPCN	IQMEDPTFKE	NYRFHAINGY	IMDTLPGLVM	AQDQRIRWYL
1051	LSMGSNENIH	SIHFSGHVFT	VRKKEEYKMA	LYNLYPGVFE	TVEMLPSKAG
1101	IWRVECLIGE	HLHAGMSTLF	LVYSNKCQTP	LGMASGHIRD	FQITASGQYG
1151	QWAPKLARLH	YSGSINAWST	KEPFSWIKVD	LLAPMIIHGI	KTQGARQKFS
1201	SLYISQFIIM	YSLDGKKWQT	YRGNSTGTLM	VFFGNVDSSG	IKHNIFNPPI
1251	IARYIRLHPT	HYSIRSTLRM	ELMGCDLNSC	SMPLGMESKA	ISDAQITASS
1301	YFTNMFATWS	PSKARLHLQG	RSNAWRPQVN	NPKEWLQVDF	QKTMKVTGVT
1351	TQGVKSLLTS	MYVKEFLISS	SQDGHQWTLF	FQNGKVKVFQ	GNQDSFTPVV
1401	NSLDPPLLTR	YLRIHPQSWV	HQIALRMEVL	GCEAQDLY	

Fig._1

GGCAATGGAG CGTGAAGAAG GGCCCCAGGG CTGACCCCGG CAAACGTGAC (50)
CCGGGGCTCC GGGGTGACCC AGGCAAGCGT GGCCAAGGGG CCCGTGGGTG (100)
ACACAGGCAA CCCTGACAAA GGCCCCCCAG GAAAGACCCC CGGGGGGCAT (150)
CGGGGGGGTG TTGGCGGGTC ATGGGGGGGG CGGGTCATGC CGCGCATTCC (200)
TGGAAAAAGT GGAGGGGGCG TGGCCTTCCC CCCGCGGCCC CCTAGCCCCC (250)
CCGCAGAGAG CGGCGCAACG GCGGGCGAGC GGCGGGGGGT CGGGGTCCGC (300)
GGGCTCCGGG GGCTGCGGGC GGTGGATGGC GGCTGGCGTT CCGGGGATCG (350)
GGGGGGGGTC GGGGGGCGCT GCGCGGGCGC AGCCATGCGT GACCGTGATG (400)
AG (402)

Fig._2

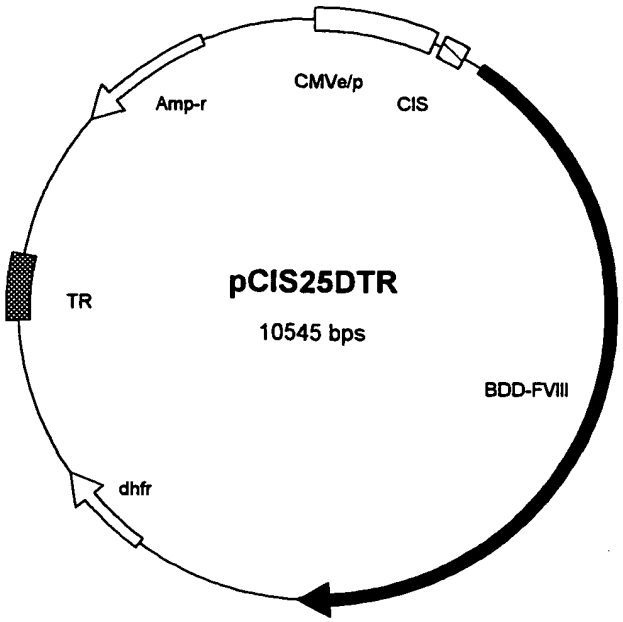


Fig._3

Fig._4A

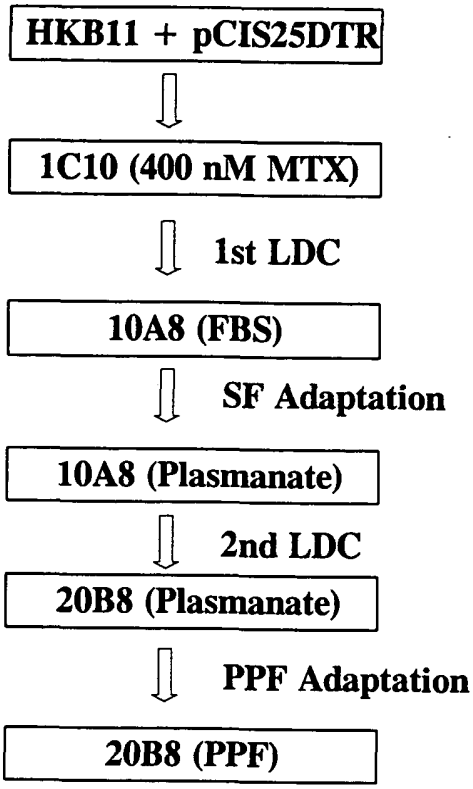
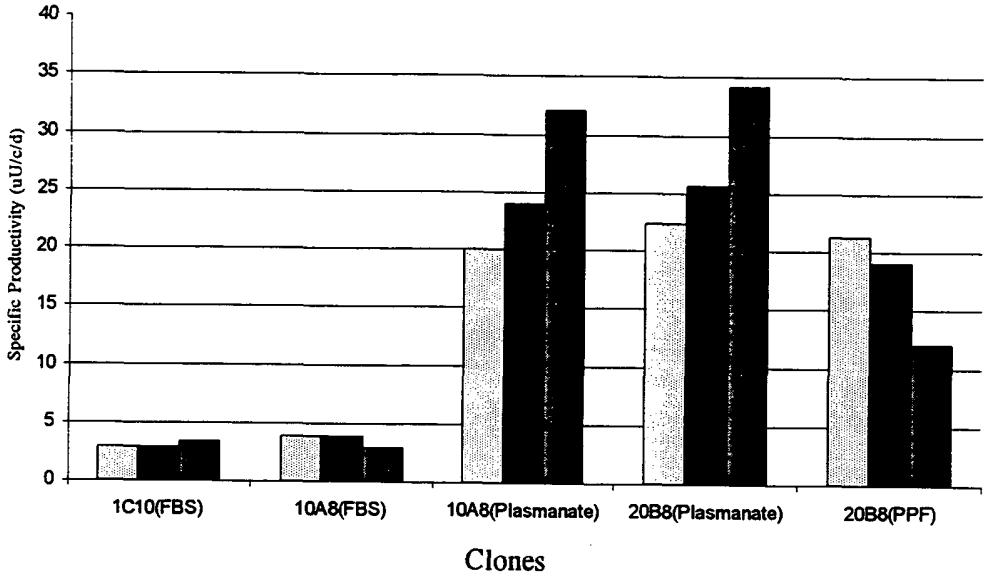

HKB11 + pCIS25DTR
1C10 (400 nM MTX)
1st LDC
10A8 (FBS)
SF Adaptation
10A8 (Plasmanate)
2nd LDC
20B8 (Plasmanate)
PPF Adaptation
20B8 (PPF)

Fig._4B


Specific Productivity (uU/c/d)
40
35
30
25
20
15
10
5
0
1C10(FBS)
10A8(FBS)
10A8(Plasmanate)
20B8(Plasmanate)
20B8(PPF)
Clones

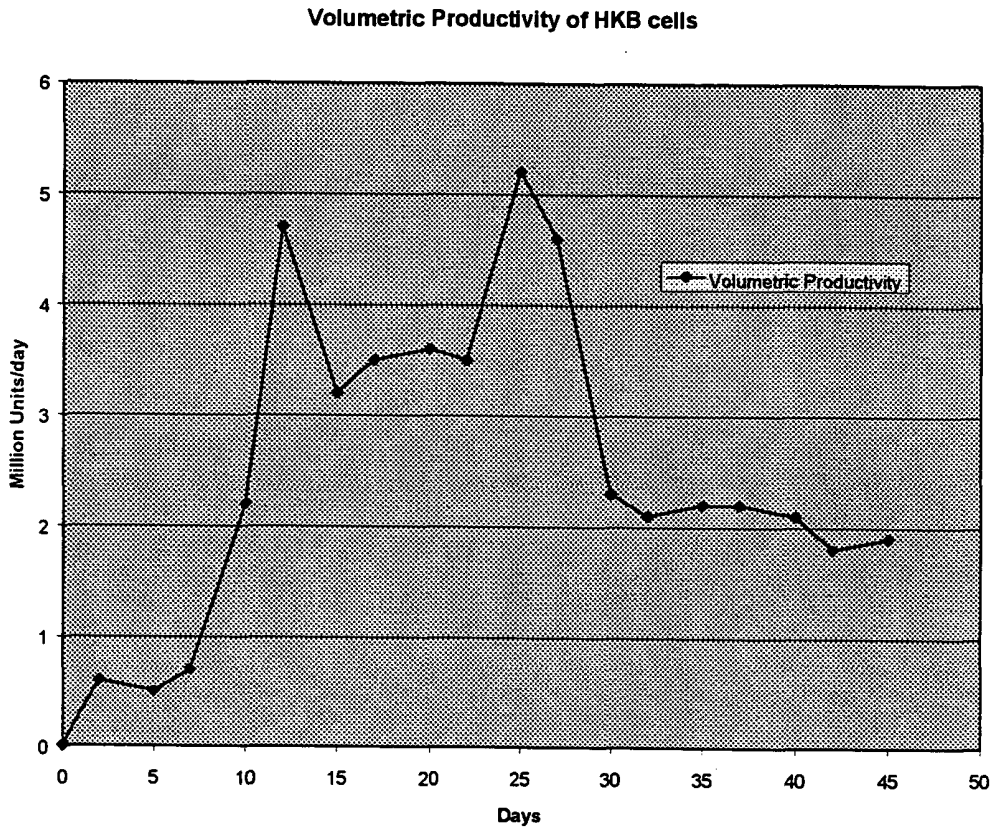

Volumetric Productivity of HKB cells
Million Units/day
Days
Volumetric Productivity
0
1
2
3
4
5
6
0
5
10
15
20
25
30
35
40
45
50

Fig._5